



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246



D5815-9

Job Sheet 207568



POSITIVE RECALL

EFFECTIVE 3/13/20 AUTH: [Signature]

RELEASED _____ DATE _____

Part No: D5815-9

Job Qty: 8 pcs

Part Name: Hoop



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 2/27/20

Job Tracking No:

Due Date: 4/27/20

Created By: Jennifer Renwick

Type: Stock

Description:

Note: URF 20-522 DWG 5815 REV.A IPP REV:A NEW ISSUE 20.01.16 JV VERF:DD

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup	Run	Workcenter / Supplier	Lead Time	
100	Large Fab - Welded Assy-1	8 pcs	4/27/20	4/27/20	0.00	2.67	Large Fab - 1		
							Large Fab - 10		
							Large Fab - 2		
							Large Fab - 3		
							Large Fab - 4	DAS	
							Large Fab - 5	24	
							Large Fab - 6	9-89	
							Large Fab - 7		
							Large Fab - 8		
							Large Fab - 9		
							Large Fab - 11 (Various)		
							Large Fab - 12		
110	QC 5	8 pcs	4/27/20	4/27/20	0.00	0.00	QC 5 - 10		
							QC 5 - 12		
							QC 5 - 17		
							QC 5 - 18		
							QC 5 - 19		
							QC 5 - 22		
							QC 5 - 24		
							QC 5 - 3		
							QC 5 - 43		
							QC 5 - 49		
							QC 5 - 51		
							QC 5 - 58		
							QC 5 - 68		
							QC 5 - 9		
							QC 5 - 50		
							QC 5 - 30		
							QC 5 - 40		
							QC 5 - 61		
							QC 5 - 81		



Container No: S264099



Part: D5815-9

Job No: 207568

Serial No/Batch: S264099

Revision: REV.A

Inspector:

Exp Date:

Instructions:

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Date: 03/17/20

DAS

MAR 18 2020

40
9-89

Plex 3/12/20 8:07 AM Dart.lajeunesse.marie

120 Packaging 3-1 - Stock - B4B 8 pcs

4/27/20

0.00 0.00

Packaging 3 - 1 - B4B

Packaging 3 - 2 - B4B

Packaging 3 - 3 - B4B

Packaging 3 - 4 - B4B

Packaging 3 - 5 - B4B

Packaging 3 - 6 - B4B

Packaging 3 - 7 - B4B

Packaging 3 - 8 - B4B

Packaging 3 - 9 - B4B

Packaging 3 - 10 - B4B

Packaging 3 - 11 - B4B

Packaging 3 - 12 - B4B

Packaging 3 - 13 - B4B

Packaging 3 - 14 - B4B

Packaging 3 - 15 - B4B

Packaging 3 - 16 - B4B

Packaging 3 - 17 - B4B

Packaging 3 - 18 - B4B

Packaging 3 - 19 - B4B

Packaging 3 - 20 - B4B

Packaging 3 - 21 - B4B

Packaging 3 - 22 - B4B

Packaging 3 - 23 - B4B

Packaging 3 - 24 - B4B

Packaging 3 - 25 - B4B

Packaging 3 - 26 - B4B

Packaging 3 - 27 - B4B

Packaging 3 - 28 - B4B

Packaging 3 - 29 - B4B

Packaging 3 - 30 - B4B

Packaging 3 - 31 - B4B

Packaging 3 - 32 - B4B

Packaging 3 - 33 - B4B

Packaging 3 - 34 - B4B

Packaging 3 - 35 - B4B

Packaging 3 - 36 - B4B

Packaging 3 - 37 - B4B

MAC

130 QC 21 - SA

8 pcs

4/27/20

0.00 0.00

QC 21 - SA - 21

QC 21 - SA - 70

QC 21 - SA - 53

MAR 19 2020

Part Op 100 - 1- Cut material to 58" 2- Bend and drill #30 vent hole as per D5815-9 dwg 3- Remove markings on tube 4- Debur
 Descriptions: 110 - (QC5- Inspect part completeness to step on W/O)

120 - Identify as per dwg & Stock Location:

130 - QC21- Final Inspection - Work Order Release

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
M4130NTS0.500W.035	4130 Square Tube .500 X .500 X .035W	38.6664 ft (4.8333 ea)	100-Large Fab - Welded Assy-1	S260577

Job Allocations

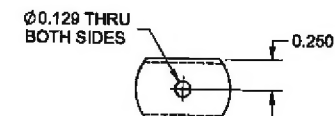
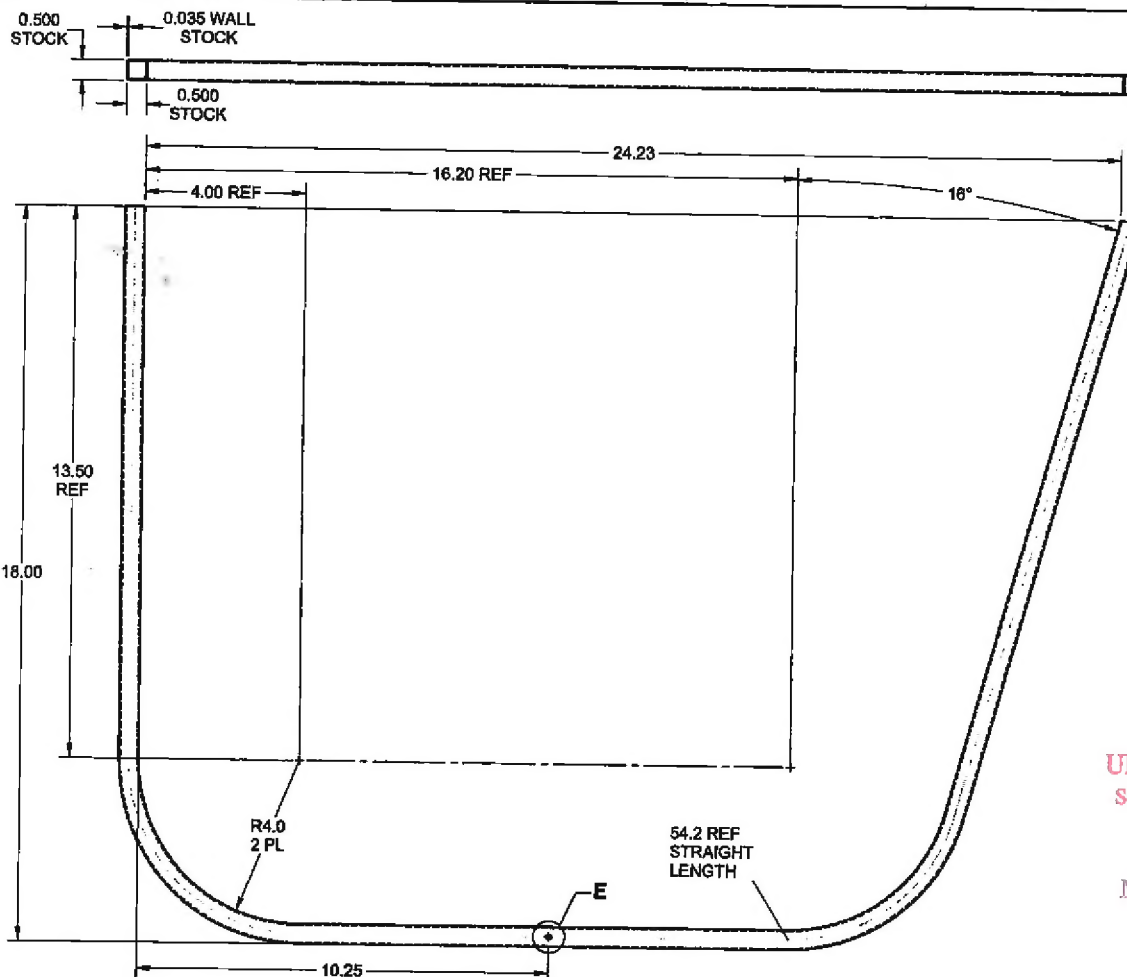
Operation	Component Part	Required	Inventory	Allocated
100-Large Fab - Welded Assy-1	M4130NTS0.500W.035	39	577	0

Part Specifications

Specifications could not be found.

M4130NTS0.500W.035
 S260577

Part.lajeunesse.marie



DETAIL
SCALE 3X

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE

WORK ORDER
NO. 204568 ML5
2003-12

D5815-9 HOOP
(DERIVED FROM AERO DESIGN P/N 94030-01)

UNDER REVIEW
URF 2020-522 20.02.14 (NO)

- NOTES:
- 1) MATERIAL: AISI 4130N STEEL SQUARE TUBING, 1/2 X 0.035 WALL PER MIL-T-6736 OR AMS 6371/6360/6361/6362/6373/6374 REF DART SPEC M4130N-TS0.600W.035
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010
 - 6) IDENTIFICATION: IDENTIFY PER DART QSI 044
 - 7) WEIGHT: 0.93 lbs

RELEASED
2020 FEB 18 NO

APPROVED

DESIGN
DRAWN
CHECKED
MFG. APPR.
APPROVED
DE APPR.
DATE

ZF
ZF
KPT
DD
NO
CP

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA
DRAWING NO.
D5815
TITLE
BASKET HOOPS

REV. A
SHEET 5 OF 5
SCALE
NTS

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2/19/2020

PURCHASE ORDER



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER

POHB045883



Supplier: FAC001-VU
Factory Steel
14020 Oakland Ave.
Detroit, MI 48203 USA
Phone: 313 883 6300
Fax: 313 883 4883

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

PO No: POHB045883

PO Date: 2/18/20

Due Date: 2/28/20

Purchase Order

Revision:

Revision Date:

Issued By: Lavole, Chantal
Phone: 613-623-5200 Ext: 242
Fax: 613-632-1053
clavois@dartaero.com

Vic: Ground

Pymt Terms: Net 30

Freight Terms:

Special Comments:

FEB 18 2020

Items

Line	Item	Job	Part	Drawing	Supplier	Description	Status	Account	Due	Order	Received	Balance	Unit	Extended
					Part No				Date	Quantity	Quantity		Price (USD)	Price
1			M4130NTS0.500W.035			4130 Square Tube .500 X .500 X .035W MATERIAL: AISI 4130N STEEL TUBING AS PER MIL-T-6736 OR AMS 6371/6380/6361/6362 6373/6374 receive ft	Firmed		2/28/20	600 ft	0 ft	600 ft	\$6.49/ft	\$3,894.00

61/24
663

MAR 04 2020

Grand Total: \$3,894.00

Order Notes

Procurement Quality Clauses

A005 right of entry

A012 chemical and physical test report

A016 personnel qualification

A017 raw material identification (as applicable). No Raw Metals from China or Soviet Bloc Countries. (DFARS)

A026 certification of material conformance

A041 quality management system

A042 dart notification by supplier

A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program.

A049 supplier awareness.

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Plex 2/19/20 2:52 PM Dart.Lavole.Chantal

PACKING LIST

No. 67811

PG 1 OF 1

FACTORY STEEL & METAL SUPPLY 14020 OAKLAND AVENUE DETROIT, MI 48203 (313)883-6300 PHONE (313)883-4883 FAX	CUSTOMER PO POHB045883		BUYER CHANTEL LAVOIE Tel (613) 632-3336 Fax (613) 632-4443	SHIP DATE 02/21/2020
	CUSTOMER JOB		SALES REP MICK HALON	SHIP VIA ****TRUCK****
SOLD TO DART AEROSPACE 1270 ABERDEEN STREET HAWKESBURY, ON K6A 1K7	SALES ORDER 60752	ORDER DATE 02/19/2020	SHIP INST CALL WHEN READY PRO#	RESALE # 59-2958719
	SHIP TO DART AEROSPACE 1270 ABERDEEN STREET HAWKESBURY, ON K6A 1K7		TERMS NET 30 DAYS	CARRIER TRUCK
				BLIND Y/N N
			FOB DETROIT	

LINE	QUANTITY	DESCRIPTION	WIDTH	LENGTH	WEIGHT
1	611.667 FT	PACK IN CARDBOARD TUBE 4130N CD SMLSS SQ TUBE 1/2" X .035W MILT-6736 Tag Mill Ref # Heat 154506 023914 25537 NTRS (CIRCLE) FAX SHIPMENT INVOICE ALL DATE: _____ INITIAL: _____	Pcs Length 27 21' 24" RL	21' 24" RL	135.361 Feet Weight 611.667 135.361
TOTAL WT 135 LBS					
RECEIVED BY - SIGNATURE		RECEIVED BY - PRINTED NAME		DATE RECEIVED	

44451

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M4130NT50.500W.035 PO / BATCH NO.: P04190Y5803
 DATE: MAR 04 2020 5260577

MATERIAL CERT REC'D: YES
 QUANTITY RECEIVED: 611 FT
 QUANTITY INSPECTED: 611 FT
 QUANTITY REJECTED: 0

THICKNESS ORDERED: .500X.500 W.035
 THICKNESS RECEIVED: .500X.500 W.035
 SHEET SIZE ORDERED: ---
 SHEET SIZE RECEIVED: ---

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="checkbox"/>	
CORRECT FINISH	<input checked="" type="checkbox"/> N	
CORROSION	Y <input checked="" type="checkbox"/>	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/> N	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="checkbox"/> N	MIL-T-6836
CORRECT THICKNESS	<input checked="" type="checkbox"/> N	
PHOTO REQUIRED	Y <input checked="" type="checkbox"/>	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/> N	KIT 25537
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/> N	
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/> N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="checkbox"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="checkbox"/>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

Testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY: <u>---</u>	SIGNED OFF BY: <u>---</u>		
DATE: <u>MAR 04 2020</u>	DATE: <u>---</u>		

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

LIME1

M4130NTS0.500W.035

PO413045882

DART

DESIGN DH	DRAWN BY DH	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED H	APPROVED H	DRAWING NO. M4130N-TS	REV. A SHEET 1 OF 1
DATE 05.02.09		TITLE 4130N SQUARE TUBING	SCALE NTS
A	05.02.09	NEW ISSUE	

PURCHASE MATERIAL:

AISI 4130N STEEL SQUARE TUBING PER ONE OF
THE FOLLOWING SPEC'S: MIL-T-6736, AMS 6371,
6360, 6361, 6362, 6373 OR 6374

PART NUMBER:

M4130N-TS | A.AAA | W | .TTT |

WHERE A.AAA = WIDTH IN INCHES
TTT = WALL THICKNESS IN INCHES

EXAMPLE: 0.50" X 0.035" WALL = M4130N-TS0.500W.035

RELEASED

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PLYMOUTH TUBE CO.

3209 E. 15th St. Detroit, MI 48203
Phone: (313) 373-1215 Fax: (313) 373-1216

TRUST YOUR SOURCE, ACCEPT NO SUBSTITUTIONS

PRODUCT CERTIFICATION

SALES ORDER - LINE / RLS

179637 - 1 / 0

SHIP TO

Factory Steel & Metal Supply Co
14020 Oakland Avenue
Detroit, MI 48203
USA

WORK ORDER 023914

HEAT NUMBER 25537

MELT SOURCE Timken Steel - Melt/Mfg. USA

PCS/HEAT

0

CUSTOMER P.O. 3999	CUSTOMER PART SQ-N12035	QUANTITY	LADING NO	CERT ID / REV	CERT DATE								
PART DESCRIPTION SHSQ0500035J200 ***** Square OD ***** Side1: 0.5000 Max:0.5100 Min:0.4900 Side2: 0.5000 Max:0.5100 Min:0.4900 Wall: 0.0350 Max:0.0380 Min:0.0320 Length: 12.63±0.20 Spec: (MIL-T 6736B) Seamless Aircraft Grade: 4340 Anneal: Cond N													
CERTIFICATION REQUIREMENTS FAR BAA (FAR 52.225-1 Buy America Act Supplies), DFARS 252.225-7001 Buy America Act & Bal. of Payments Program FAR TAA (FAR 52.225-5 Trade Agreement), FAR 52.225-6 Buy America Act, and FAR 52.225-7 Buy America Act, to the requirements of ASTM A-450. The Grain size is determined and reported by the raw material supplier in accordance to ASTM E-112. This raw material was magnetic particle inspected by the raw material supplier in accordance to AMS 2640J and/or ASTM E-1444, and rated as Frequency, and Severity to AMS 2301, latest revision. Yield is determined by using the 0.2% offset method. Additional Specifications - AMS-T 6736B, 6360P & 6371L. Material produced in accordance to ASTM A-519-17. Jominy results: J(5/16")=38 J(8/16")=31.													
Chemical Analysis													
C	Mn	P	S	Si	Al	Cr	Mo	Ni	Bb	Cu	V	Ti	Sn
.30	.56	.008	.005	.29	.025	1.02	.20	.13	.000	.18	.009	.003	.009
Physical Properties													
Frag.	Severity	Grain Size											
.000	.000	7											
Mechanical Properties													
TEST	UNITS	PTESTS	HIGH	LOW	AVERAGE	STD-DEV							
Tensile	Psi	6	121110	115340	118173	2536							
Yield	Psi	6	115370	108700	112526	2436							
Elongation	%	6	17	17	17	0							
Rockwell C	Rc	6	22	22	22	0							
TEST	RESULT												
Decarb/OD	Pass												
Total ID/OD decarb	Pass												

I certify that the results are a true and correct copy of the records prepared and maintained by Plymouth Tube Company, Streater in compliance with the requirements of the cited specification. Chemistry is as reported by the Steel supplier. This test report cannot be reproduced or distributed except in full without the written permission of Plymouth Tube.

James D. Russell

Quality Assurance



PLYMOUTH TUBE CO.

Phone: (800) 338-5555 Fax: (313) 338-7343

TRUST YOUR SOURCE. ACCEPT NO SUBSTITUTIONS.

PRODUCT CERTIFICATION

SALES ORDER - LINE / RLS

179657-1 / 0-

SHP TO

Factory Steel & Metal Supply C
14020 Oakland Avenue
Detroit, MI 48203
USA

WORK ORDER 023314

HEAT NUMBER 25337

PCS/HEAT 0

MELT SOURCE Written Steel - Melt/Mfg. USA

CUSTOMER P.O. 3999	CUSTOMER PART SQ-N12035	QUANTITY	LOADING NO	CERT ID / REV	CERT DATE
PART DESCRIPTION SHSQ0500035J200					
<u>Additional Specification(s)</u>					
<u>TEST</u> Brinell	<u>LENTS</u> Brinell	<u>TESTS</u> 0	<u>HIGH</u> 251	<u>LOW</u> 197	<u>AVERAGE</u> 225
					<u>STD-DEV</u> 27
<p>This test report data is for the heat Chemistry Stated above.</p> <p>The material in this test report is:</p> <ol style="list-style-type: none"> 1) Drawn in the USA 2) Free from Polybrominated Biphenyls (PBB), Polybrominated Diphenyl Ethers (PBDE), and Mercury contamination. 3) NAFTA compliant. <p style="text-align: right;">End of Certification</p>					

I certify that the results are a true and correct copy of the records prepared and maintained by Plymouth Tube Company, Streater in compliance with the requirements of the cited specification. Chemistry is as reported by the Steel supplier. This test report cannot be reproduced or distributed except in full without the written permission of Plymouth Tube.

Janet Beresoff
Quality Association

Entered: _____ Date: _____



WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/>	DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Cross tube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> </div> <div> Eng. (Non-AW) <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Water Jet <input type="checkbox"/> Supplier <input type="checkbox"/> Quality <input type="checkbox"/> </div> </div>			
Date : _____	Sequence #: _____	QTY Affected : _____		MRB (QSI042)	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor	
				QC / QA Coordinator	
Root Cause <div style="display: flex; flex-direction: column; align-items: flex-start;"> <div>Operator <input type="checkbox"/></div> <div>Manufacturing Process <input type="checkbox"/></div> <div>Equip/Tooling <input type="checkbox"/></div> <div>Handling/Presservation <input type="checkbox"/></div> <div>Material <input type="checkbox"/></div> <div>Product Improvement <input type="checkbox"/></div> <div>Process Improvement <input type="checkbox"/></div> <div>Human Factors <input type="checkbox"/></div> </div>		FAULT CATEGORY <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Bending <input type="checkbox"/> Crushing <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave/Twist <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Mislabeled </div> <div style="width: 50%;"> <input type="checkbox"/> Contamination <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Incomplete/Unclear Instructions <input type="checkbox"/> Drill Holes <input type="checkbox"/> Fit/Function </div> <div style="width: 50%;"> <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain Direction <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Off-set/Set-up </div> <div style="width: 50%;"> <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Outside Tolerance <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Misread </div> </div>			
Other/Details:					